(54) **VECTOR QUANTIZING AND ENCODING SYSTEM AND VECTOR DECODING SYSTEM**

(57) Abstract:

PROBLEM TO BE SOLVED: To reduce a storage capacity required for storing a code book while maintaining the picture quality of reproducing pictures.

SOLUTION: A classification part 101 analyzes an input vector X, discriminates to which class it belongs and decides conversion contents to be performed to the representative vector of the discriminated class. The results are outputted to a distortion computing part 103 as discrimination information ij and conversion information (a). The distortion computing part 103 searches the representative vector closest to the input vector X' normalized and outputted by a normalization part 102 from a classified code book memory 104 and outputs the index I_{ij}. In the meantime, a decoding part 106 on a decoding side reads an output vector corresponding to the index I_{ij}, received through a transmission line 105 and performs the conversion of the conversion contents specified by the conversion information (a) to the output vector.